

**Product Summary** (@ T<sub>A</sub> = +25°C)

V <sub>RRM</sub> (V)	I <sub>O</sub> (mA)	V <sub>F(MAX)</sub> (V)	I <sub>R(MAX)</sub> (μA)
20	700	0.55	50

**Features and Benefits**

- Ultra Low Forward Voltage Drop
- Superior Reverse Avalanche Capability
- Patented Super Barrier Rectifier Technology
- Soft, Fast Switching Capability
- +150°C Operating Junction Temperature
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

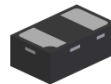
**Applications**

- SMPS
- DC-DC Converter
- Freewheeling Diodes
- Reverse Polarity Protection

**Mechanical Data**

- Case: X2-DFN1006-2
- Case Material: Molded Plastic, "Green" Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - NiPdAu over Copper Leadframe; Solderable per MIL-STD-202, Method 208 (e4)
- Weight: 0.001 grams (Approximate)

X2-DFN1006-2



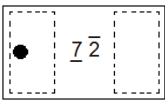
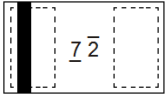
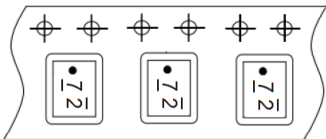
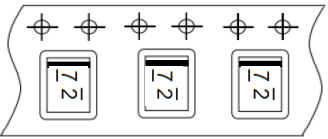
Bottom View

**Ordering Information** (Note 4)

Part Number	Case	Packaging
SBR07U20LPS-7	X2-DFN1006-2	3,000/Tape & Reel

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

**Marking Information**

<b>SBR07U20LPS-7</b>	 <p>From date code 1527 (YYWW), this changed to:</p> 
	<p style="text-align: center;">Top View Dot Denotes Cathode Side</p>  <p style="text-align: center;">Top View Bar Denotes Cathode Side</p>  <p style="text-align: center;">Z 2 = Product Type Marking Code</p>

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitance load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	20	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
RMS Reverse Voltage	V <sub>R(RMS)</sub>	14	V
Average Rectified Output Current	I <sub>O</sub>	700	mA
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	7	A

**Thermal Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Maximum Thermal Resistance (Note 5)	R <sub>θJA</sub>	224	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	V <sub>(BR)R</sub>	20	—	—	V	I <sub>R</sub> = 50μA
Forward Voltage Drop	V <sub>F</sub>	—	0.34 0.46 0.51 0.48	0.38 0.50 0.55 0.51	V	I <sub>F</sub> = 0.1A, T <sub>J</sub> = +25°C I <sub>F</sub> = 0.5A, T <sub>J</sub> = +25°C I <sub>F</sub> = 0.7A, T <sub>J</sub> = +25°C I <sub>F</sub> = 0.7A, T <sub>J</sub> = +125°C
Leakage Current (Note 6)	I <sub>R</sub>	—	6 1.5	50 5	μA mA	V <sub>R</sub> = 20V, T <sub>J</sub> = +25°C V <sub>R</sub> = 20V, T <sub>J</sub> = +150°C

Notes: 5. Device mounted on FR-4 substrate with minimum recommended pad layout, which can be found on our website at <http://www.diodes.com>.  
6. Short duration pulse test used to minimize self-heating effect.

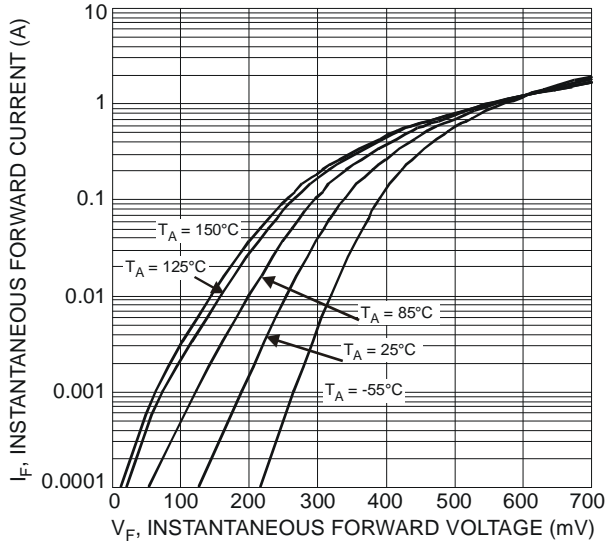


Fig. 1 Typical Forward Characteristics

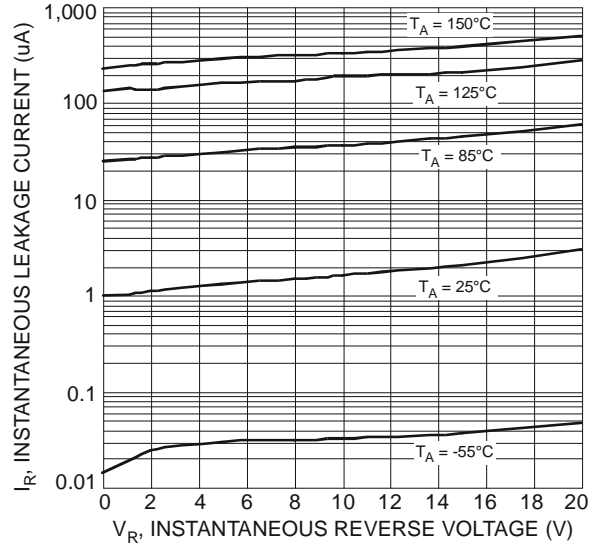
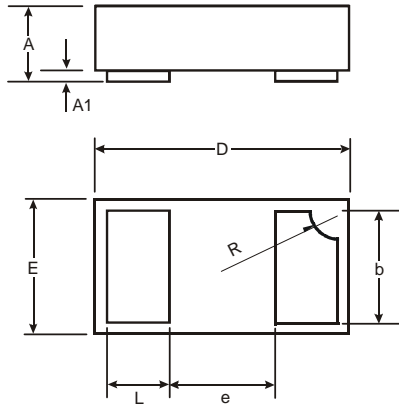


Fig. 2 Typical Reverse Characteristics

**Package Outline Dimensions**

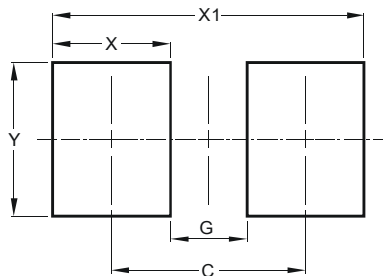
Please see AP02001 at [http://www.diodes.com/\\_files/datasheets/ap02001.pdf](http://www.diodes.com/_files/datasheets/ap02001.pdf) for the latest version.



X2-DFN1006-2			
Dim	Min	Max	Typ
A	0.34	0.4	0.37
A1	0	0.05	0.03
b	0.45	0.55	0.50
D	0.95	1.075	1.00
E	0.55	0.675	0.60
e	—	—	0.40
L	0.20	0.30	0.25
R	0.05	0.15	0.10
All Dimensions in mm			

**Suggested Pad Layout**

Please see AP02001 at [http://www.diodes.com/\\_files/datasheets/ap02001.pdf](http://www.diodes.com/_files/datasheets/ap02001.pdf) for the latest version.



Dimensions	Value (in mm)
C	0.70
G	0.30
X	0.40
X1	1.10
Y	0.70

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